

August 10, 2005

Sonoma County
Department of Health Services
475 Aviation Blvd.
Suite 220
Santa Rosa, CA 95403
Attn: Mr. Cliff Ives
Senior Environmental Health Specialist

**SUBJECT: REPORT OF MONITORING WELL INSTALLATION AND TESTING,
FOUR CORNERS FEED STORE LEAKING UNDERGROUND TANK SITE,
796 TODD ROAD, SANTA ROSA**

Dear Mr. Ives,

West & Associates Environmental Engineers, Inc. is pleased to submit this letter report of findings for groundwater assessment completed at the leaking underground tank site referenced above.

BACKGROUND

The subject site was formerly a retail fuel operation equipped with underground storage tanks. The Four Corners Feed Store site is indicated on Figure 1.

There was apparently both gasoline and diesel release from the former tank system. Groundwater assessment activities conducted between 2001 and 2005 profiled a relatively small contaminant plume restricted to the immediate tank pit area. The extent and magnitude of groundwater contamination which may have migrated under the feed store building, however, was unknown.

In June 2005 West & Associates submitted a workplan to conduct additional groundwater assessment. Specifically, two new groundwater monitoring wells were proposed. One new well, MW-5, was sited immediately downgradient from the former underground tank pit. The other new well, MW-4, was sited at the southeast corner of the feed store building. The locations of the two new wells and the three existing Four Corner Feed Store site groundwater monitoring wells are illustrated on Figure 2. The groundwater gradient direction is also indicated on Figure 2.

FIELD INVESTIGATION

On July 11, 2005 both new groundwater monitoring wells were installed as proposed. Each well was constructed in a 12 inch diameter boring completed by a C-57 licensed drilling subcontractor. Borings were completed under a valid County of Sonoma issued permit. A copy of the drilling permit is attached to this report.

Both borings were logged by a California licensed civil engineer. Boring logs are attached to this report.

Four soil samples, at five foot intervals, were collected from each boring. Soil samples were collected using the En Core procedure and equipment. All soil sample collection and handling practices conformed with North Coast Region guidelines.

Well construction specifications conformed with those presented in the workplan, which are:

Casing: 2" dia Schedule 40 PVC
Boring Diameter: 12 inches
Total Depth: 20 feet
Screened Section: 15 feet (5-20 BGS)
Slot Size: 0.010 inches
Filter Pack: Lonestar 12/210 sand

Groundwater monitoring wells MW-4 and MW-5 are identical in construction to wells MW-1, MW-2 and MW-3. Well construction details are graphically depicted on the boring logs.

Two days after well installation, both new groundwater wells were developed. The development procedure consisted of surging and purging. Surging was accomplished with a surge block, purging with an electric submersible pump. The surge/purge procedure was continued until groundwater was visibly free of turbidity.

Approximately 30 gallons of water was extracted from each well during the development process. Development water was drummed and labeled for temporary on-site storage.

Both new groundwater monitoring wells, MW-4 and MW-5, were sampled on July 20, 2005. Sampling procedures were in conformance with North Coast Region guidelines. Purge water generated during the sampling process was drummed and labeled for temporary on-site storage.

SOIL AND GROUNDWATER SAMPLE ANALYSIS

All collected soil and groundwater samples were analyzed in a DHS certified laboratory for TPH-gas utilizing EPA method m8015. Additionally, each groundwater sample was tested for TPH-diesel and oxygenated additives using EPA test method 8260. All samples were accompanied by chain of custody documentation.

Analytical results for soil samples are presented in Table 1. Analytical results for groundwater samples are presented in Table 2. Original laboratory report forms and chain of custody documentation is attached to this report.

**TABLE 1
SOIL SAMPLE ANALYSES
FOUR CORNERS FEED STORE
August 2005
All Values in mg/Kg (PPM)**

SAMPLE ID	TPH GAS	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES
MW4-1	ND	ND	ND	ND	ND
MW4-2	ND	ND	ND	ND	ND
MW4-3	ND	ND	ND	ND	ND
MW4-4	ND	ND	ND	ND	ND
MW5-1	ND	ND	ND	ND	ND
MW5-2	ND	ND	ND	ND	ND
MW5-3	ND	ND	ND	ND	ND

NOTES AND ABBREVIATIONS

TPH: Total Petroleum Hydrocarbons

ND: Not Detected (See analytical report for detection limit)

TABLE 2
GROUNDWATER SAMPLE ANALYSIS
FOUR CORNERS FEED STORE
August 2005
All Values in ug/l (PPB)

WELL ID	TPH GAS	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	TPH DIESEL
MW-4	ND	ND	ND	ND	ND	0.5	ND
MW-5	ND	ND	ND	0.7	1.4	ND	ND

ABBREVIATIONS

TPH: Total Petroleum Hydrocarbons

ug/l: Micrograms per liter

ND: Not Detected (See analytical report for detection limits)

CONCLUSIONS AND RECOMMENDATIONS

No detectable soil contamination was found in any of the samples collected from monitoring wells MW-4 or MW-5. Soil contamination has historically not been a problem at the Four Corners Feed Store site.

A slight trace of MTBE was detected in groundwater from well MW-4. It would appear that the MW-4 location represents the outer perimeter of MTBE migration.

Trace concentrations of ethyl benzene and total xylenes were detected in groundwater at well MW-5. The low levels of contamination detected in well MW-5 are similar to those detected periodically at well MW-2.

The results of this site investigation indicate a groundwater plume of limited dimensions. The plume footprint is restricted to an area immediately downgradient of the former tank pit, with some MTBE migration under the feed store building. The "Historical Groundwater Sample Analysis Results" tables attached to this report indicate the magnitude of groundwater contamination. Benzene has only been detected in one well (MW-2) on one occasion (April 2004, 7.9 ppb). TPH-gas has only been detected in one well (MW-2) on two occasions (April 2004, 580 ppb and March 2005, 750 ppb). TPH-d has been detected in well MW-2 on one occasion (March 2005, 370 ppb).

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It is concluded that the extent and magnitude of groundwater contamination at the Four Corners Feed Store leaking underground tank site has been adequately defined.

Due to the low concentrations and types of contaminants detected, as well as the limited extent of contamination, it is recommended that the site be considered for case closure.

Sincerely,

Brian W. West PE
President
West & Associates Environmental Engineers, Inc.

BWW/dg

Attachments: Figures 1 and 2
Boring Permit
Boring Logs
Analytical Reports & Chain of Custody Documentation
Historic Groundwater Sample Analysis

cc: Joe Gaspardone, Meta Property Management

TABLE 3
SUMMARY OF HISTORICAL GROUNDWATER SAMPLE ANALYSIS RESULTS
FOUR CORNERS FEED STORE
August 2003 to Present
All Hydrocarbon Values in ug/l (PPB)

MONITORING WELL MW-1

DATE	GWE	TPH (GAS)	TPH (DIESEL)	BENZENE	TOLUENE	ETHYL- BENZENE	TOTAL XYLENES	MTBE
8/6/03	NA	NA	NA	NA	NA	NA	NA	NA
9/17/03	89.63	ND	ND	ND	ND	ND	ND	ND
11/18/03	89.12	ND	ND	ND	ND	ND	ND	ND
4/29/04	93.13	ND	ND	ND	ND	ND	ND	ND
12/6/04	89.57	ND	ND	ND	ND	ND	ND	ND
3/24/05	96.99	ND	ND	ND	ND	ND	ND	ND

TABLE 3 (cont'd)
MONITORING WELL MW-2

DATE	GWE	TPH (GAS)	TPH (DIESEL)	BENZENE	TOLUENE	ETHYL- BENZENE	TOTAL XYLENES	MTBE
8/6/03	90.51	ND	NA	ND	ND	ND	ND	NA
9/17/03	89.77	ND	ND	ND	ND	ND	ND	ND
11/18/03	89.33	ND	ND	ND	ND	ND	ND	ND
4/29/04	93.05	580	NA	7.9	ND	2.0	22	ND
12/6/04	90.33	ND	ND	ND	ND	ND	ND	ND
3/24/05	96.23	750	370*	ND	0.6	4.4	89	ND

TABLE 3 (cont'd)
MONITORING WELL MW-3

DATE	GWE	TPH (GAS)	TPH (DIESEL)	BENZENE	TOLUENE	ETHYL- BENZENE	TOTAL XYLENES	MTBE
8/6/03	NA	NA	NA	NA	NA	NA	NA	NA
9/17/03	89.59	ND	ND	ND	ND	ND	ND	ND
11/18/03	89.12	ND	ND	ND	ND	ND	ND	ND
4/29/04	93.17	ND	ND	ND	ND	ND	ND	ND
12/6/04	89.61	ND	ND	ND	ND	ND	ND	ND
3/24/05	96.88	ND	ND	ND	ND	ND	ND	ND

ABBREVIATIONS

GWE: Groundwater Elevation

TPH: Total Petroleum Hydrocarbons

ug/l: Micrograms per liter

ND: Not Detected (See Appendix C for minimum detection limits)

NA: Not Analyzed

***:** The sample chromatogram does not match the standard diesel chromatogram.